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Dashed Hopes, Dashed Selves? A Sociometer Perspective on Self-esteem Change Across the Transition to Secondary School

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Abstract

The transition from primary to secondary school challenges children's psychological well-being. A cross-transitional longitudinal study (N = 306; mean age = 12.2 years) examined why some children's self-esteem decreases across the transition whereas other children's self-esteem does not. Children's expected social acceptance in secondary school was measured before the transition; their actually perceived social acceptance was measured after the transition. Self-esteem and Big Five personality traits were measured both pre- and posttransition. Self-esteem changed as a function of the discrepancy between children's expected and actually perceived social acceptance. Furthermore, neuroticism magnified self-esteem decreases when children's 'hopes were dashed'—when they experienced disappointing levels of social acceptance. These findings provide longitudinal support for sociometer theory across the critical transition to secondary school.

Keywords: self-esteem; school transition; social acceptance; neuroticism

Introduction

Each year, after summer vacation, millions of children around the world enter their new secondary school—a step into an entirely new world. Few events are as challenging in children's social lives as the transition from primary to secondary school. Right at the time that children tend to be highly concerned about how they are viewed by others, they enter a new peer group and need to re-establish their social standing and worth. One particularly important challenge for transitioning children is to maintain

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self-esteem—to maintain the value that they place on themselves as a person. There are marked individual differences in how the secondary school transition impacts children's self-esteem: Whereas some children experience marked self-esteem decreases, others manage to uphold or even enhance their previously held levels of self-esteem across the transition (Grolnick, Kurowski, Dunlap, & Hevey, 2000; Hirsch & DuBois, 1991; Lord, Eccles, & McCarthy, 1994). The goal of the present longitudinal study is to understand individual differences in self-esteem change following the secondary school transition.

Why Do School Transitions Challenge Children's Self-esteem?

Multiple changes occur when children transition into secondary school, yet changes in peer relationships are especially salient. Interactions with familiar peers become less frequent, former peer cliques disappear, and former friendships often dissolve (e.g., Berndt, Hawkins, & Jiao, 1999; Hardy, Bukowski, & Sippola, 2002). At the same time, the transition requires children to establish new peer bonds and to find their position in a newly established social hierarchy. These social changes co-occur with the onset of adolescence, a time when children are relatively sensitive—more so than in other developmental stages—to how well they are valued and accepted by others (Harter, 2006). Not surprisingly, many children experience the transition to secondary school as stressful and socially challenging (Berndt et al., 1999; Pellegrini & Bartini, 2000).

One might, therefore, expect that children's level of self-esteem should typically decrease in response to the secondary school transition. Empirical evidence, however, is inconclusive. Whereas some studies found that, on average, children's self-esteem decreases following the school transition (e.g., Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Simmons & Blyth, 1987; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991), other studies found no such evidence (e.g., Crockett, Petersen, Graber, Schulenberg, & Ebata, 1989; Hirsch & Rapkin, 1987), or even found that children's self-esteem slightly increases following the transition (e.g., Barber & Olsen, 2004; Nottelmann, 1987). What may explain these inconsistent findings? With others (Fenzel, 2000; Harter, 2006; Trzesniewski, Donnellan, & Robins, 2003), we propose that the secondary school transition is a psychologically sensitive period during which children's self-esteem is relatively likely to change due to renewed social circumstances in particular. Following this logic, the extent to which children's self-esteem decreases, increases, or remains stable will depend on how positively children experience their changed social circumstances.

Sociometer Theory: A Framework for Understanding Self-esteem Change

An important account of the psychological processes that underlie self-esteem change can be found in sociometer theory (Leary & Baumeister, 2000; Leary & Downs, 1995). Sociometer theory assumes that people have a fundamental 'need to belong', a need to be valued and accepted by others. This need has supposedly evolved because our ancestors who were living in social groups were better able to survive and reproduce than those who were living in isolation (Baumeister & Leary, 1995). Sociometer theory posits that the function of self-esteem is to monitor how much people are valued and accepted by others. Much like feelings of hunger function as a gauge of one's nutritional state, feelings of self-esteem are assumed to function as a 'sociometer', a gauge of one's interpersonal acceptance. Self-esteem is proposed to respond to changes in

interpersonal acceptance by evoking negative or positive feelings that, in turn, motivate behaviors that allow people to gain, maintain, or restore interpersonal acceptance (Denissen, Penke, Schmitt, & van Aken, 2008; Leary, Tambor, Terdal, & Downs, 1995; Thomaes et al., 2010). Sociometer theory distinguishes between state self-esteem (i.e., momentary feelings of worth) as a short-term sociometer and trait self-esteem (i.e., enduring feelings of worth) as a long-term sociometer. Whereas state self-esteem monitors the immediate situation and responds to cues of rejection and acceptance in the here and now, trait self-esteem functions as a measure of perceptions of one' s longer term 'relational value'. Based on these perceptions of how well they have been typically accepted by others in the past, people form expectations on how well they will be accepted by others in future situations (Blackhart, Nelson, Knowles, & Baumeister, 2009; Leary & Baumeister, 2000; Stinson et al., 2010).

Stinson et al. (2010) expanded sociometer theory and theorized that in addition to monitoring acceptance in the here and now, people also monitor whether social feedback is consistent or inconsistent with their trait self-esteem. When social feedback is inconsistent with the feedback people would expect based on their trait self-esteem, they may experience confusion and uncertainty about themselves, which might eventually result in the adaptation of one's trait self-esteem. Thus, whereas state self-esteem is proposed to be always reactive to immediate cues of social acceptance or rejection, trait self-esteem is thought to change only as a function of discrepancies between people's expectations of social acceptance and the actual social feedback they receive (Stinson et al., 2010).

We propose that longer term sociometer processes may explain individual differences in trait self-esteem change across the transition from primary to secondary school. At the end of primary school, children base their expectations on how much they will be valued and accepted by their future secondary school classmates on their current self-appraised relational value (Baldwin & Keelan, 1999; Cillessen & Mayeux, 2007; London, Downey, Bonica, & Paltin, 2007). In secondary school, these expectations will be confronted with the reality of a new peer group. Depending on the discrepancies between expected and actual perceived social acceptance, children should adapt their sociometer, resulting in self-esteem change. Thus, we predict that children's self-esteem will change as a function of how well they feel accepted by their new peer group and how much that acceptance is discrepant with how well they anticipated to be accepted based on their primary school experiences.

There are two bodies of research providing initial empirical support for this hypothesis: studies explicitly testing sociometer theory and studies on self-esteem change across school transitions. First, in studies testing sociometer theory, support for short-term sociometer processes has been found both in adults (e.g., Blackhart et al., 2009; Denissen, Penke, et al., 2008; Gerber & Wheeler, 2009) and children (Thomaes et al., 2010). Long-term sociometer processes, however, have been less well studied. Cross-sectional studies have shown that chronic acceptance is associated with higher trait self-esteem and rejection with lower trait self-esteem (e.g., Blackhart et al., 2009; Denissen, Penke, et al., 2008; Leary et al., 1995). A few longitudinal studies have shown that acceptance measured at one point in time predicts changes in self-esteem over time (e.g., Lemay & Ashmore, 2006, Srivastava & Beer, 2005). Also, one study among adult participants showed that self-esteem inconsistent feedback predicts self-concept change (Stinson et al., 2010).

Second, there are some studies on school transitions suggesting that self-esteem change across school transitions is predicted by changes in the type of social feedback

that children typically receive. Using cluster analysis, Hirsch and DuBois (1991) identified four different subgroups based on self-esteem levels at four time points, including the transition to secondary school. Those children who experienced decreased peer support across this two-year period also experienced declines in self-esteem. Another study showed that children who experienced difficulties with peers ('peer strain') while making the transition to secondary school experienced decreases in self-esteem over time (Fenzel, 2000). Among students transitioning from high school to college, self-esteem changed in concordance with the changes in perceived social approval from significant others (Harter & Whitesell, 2003). Thus, these studies provide initial support for the link between changes in social feedback and subsequent changes in self-esteem. They do not, however, provide insight into the impact of discrepancies between expected and actually perceived social acceptance.

Sociometer Sensitivity

Although sociometer effects are thought to be universal, this is not to say that no individual differences in sociometer sensitivity exist (Leary & Downs, 1995). Some children's self-esteem may be more sensitive to change of social context than other children's self-esteem. A good indicator of stable individual differences in sensitivity to social context is the personality trait of neuroticism (Denissen & Penke, 2008a). Children high on neuroticism tend to be tense, moody, and emotionally unstable (John & Srivastava, 1999; Shiner & Caspi, 2003). Based on an extensive review of personality theories, Denissen and Penke (2008a) conceptualized neuroticism as people's sensitivity to signs of social exclusion. Previous research involving adult participants has indeed suggested that neuroticism is associated with individuals' psychological reactivity to socially threatening events (e.g., Bolger & Zuckerman, 1995; Denissen & Penke, 2008b). For example, using both cross-sectional and daily diary data, one study found that the link between perceived social inclusion (i.e., relationship quality and conflict) and self-esteem was stronger for people high on neuroticism (Denissen & Penke, 2008b). In the present study, we will examine how neuroticism moderates the extent to which children's self-esteem is dependent upon discrepancies between their expected (i.e., by the end of primary school) and actually perceived (i.e., directly following the transition) social acceptance.

In addition to neuroticism, gender will be examined as another moderating factor. Previous research has suggested that girls attach more importance than boys to being liked and accepted by others, and express greater concerns about evaluation by peers (for a review, see Rose & Rudolph, 2006). Girls also tend to report higher levels of neuroticism (e.g., Costa, Terracciano, & McCrae, 2001; Mak, Blewitt, & Heaven, 2004). Thus, girls may be more sensitive to discrepancies between their expected and perceived social acceptance than boys, and react with larger self-esteem changes in response to those discrepancies.

The Present Study

To test how individual differences in self-esteem change are influenced by discrepancies between children's expectations and perceptions of social acceptance across the school transition, a three-wave longitudinal study was conducted. We measured children's pretransition expectations of social acceptance by future classmates and compared these expectations with their actually perceived social acceptance just after the

school transition. We measured perceived rather than peer-reported social acceptance because sociometer theory states that children's self-esteem will change in response to children's own perceptions of being accepted or not by others, regardless of actual acceptance by others. Self-esteem was assessed both pre- and posttransition. Neuroticism and gender were considered as potential moderators. To establish discriminant validity, the hypothesized moderating effect of neuroticism was contrasted with the effects of the other Big Five personality traits (i.e., agreeableness, extraversion, conscientiousness, and openness to experience). These traits do not involve psychological reactivity to social rejection, and so they were hypothesized not to moderate children's self-esteem reactions.

Based on sociometer theory, we predicted self-esteem increases when perceptions of social acceptance in secondary school exceeded prior expectations of social acceptance, and conversely self-esteem decreases when these perceptions failed to meet expectations of social acceptance. Furthermore, we predicted that the self-esteem of children high on neuroticism and of girls would be particularly reactive, both in positive and negative directions, to discrepancies between expected and perceived social acceptance.

Method

Participants

In the spring semester of grade 6 (the final year of primary school in the Dutch school system), 487 children were recruited from 22 primary schools serving middle-class communities in The Netherlands. From this initial sample, 322 children (66 percent) continued to participate in the study after they transitioned into one of the four secondary schools that participated in the study (i.e., Times 2 and 3). The rest of the initial sample went to secondary schools that did not participate in the study. Sixteen children were excluded because they were absent at one or more measurement occasions. The final sample consisted of 306 children (47 percent boys) at the age of 11–14 years [mean age = 12.2, standard deviation (*SD*) = 0.44] at the start of the study. Most participants were of Dutch origin (78 percent); others mainly were of mixed cultural/ethnical origin. Informed parental consent was obtained for all participants (consent rates ranged between primary schools from 50 percent to 100 percent; mean consent rate = 80 percent).

Procedure

In the Dutch school system, children transition into secondary school at seventh grade, and they are unfamiliar with the large majority of their secondary school classmates. In contrast to students in some other countries, Dutch seventh graders spend the entire school day among the same classmates, and thus tend to familiarize themselves with their classmates relatively quickly. Surveys were administered in children's classes at three time points. At Time 1 (grade 6 spring semester; pretransition), we measured children's self-esteem and their expected social acceptance in secondary school. At Time 2 (grade 7 fall semester; three weeks after the transition to secondary school), we measured perceived social acceptance. At Time 3 (three months later), we measured self-esteem. Personality traits were measured at all time points.

Measures

Self-esteem. Self-esteem was measured using the global self-worth scale of the self-perception profile for adolescents (Harter, 1988; translated into Dutch by Treffers et al., 2002). This well-validated five-item scale measures how satisfied children are with themselves and the way they are leading their lives. A sample item includes the following: 'Some kids are happy with themselves'. As in previous studies (e.g., Thomaes, Bushman, Stegge, & Olthof, 2008), we used a 4-point response format (1 = I am not like these kids at all; 4 = I am exactly like these kids). Negative items were recoded and a mean self-esteem score was computed. Cronbach's α was .75 at Time 1 and .82 at Time 3.

Expected Social Acceptance. Expected social acceptance was measured using a three-item scale that asked children to predict their acceptance by future classmates (i.e., 'How much do you think your classmates in secondary school will like you?', 'How popular do you think you will be in secondary school?' and 'How many friends do you think you will have in secondary school?'). Items were rated on a 5-point scale (1 = not at all/little or no; 5 = a lot). A mean expected social acceptance score was computed (Cronbach's $\alpha = .73$).

Perceived Social Acceptance. Perceived social acceptance was measured by asking children to rate on a 5-point scale (1 = doesn't like me at all; 5 = likes me a lot) how much they thought each of their classmates liked them (David & Kistner, 2000). From these ratings (number of ratings ranged among classes from 14 to 30, $M = 26$), a mean score representing perceived social acceptance was computed.

Big Five Personality Traits. The Big Five personality traits were measured using the Big Five inventory (John & Srivastava, 1999; translated into Dutch by Denissen, Geenen, van Aken, Gosling, & Potter, 2008). This self-report questionnaire consists of 44 items that measure the Big Five traits of neuroticism, conscientiousness, agreeableness, extraversion, and openness to experience. A sample item for the neuroticism scale is 'I see myself as someone who can be tense'. Items were rated on a 5-point scale (1 = disagree strongly; 5 = agree strongly). Negative items were recoded and mean trait scores were computed for each time point. Cronbach's α ranged from .73 to .86. Because all personality traits were highly stable over time (rs > .60), trait scores at Times 1, 2, and 3 were aggregated.

Results

Preliminary Analyses

Table 1 shows the descriptive statistics and correlations between the study variables. Girls reported higher levels of neuroticism than boys, $F(1, 304) = 16.56$, $p < .01$, $d = 0.48$. No gender differences were found for self-esteem, expected social acceptance, and perceived social acceptance (ps > .17). Mean levels of self-esteem did not significantly change across the transition from primary school (Time 1) to secondary school (Time 3), $t(305) = 0.89$, $p > .37$. Self-esteem was moderately stable across the school transition ($r = .48$).

Table 1. Means, Standard Deviations, and Intercorrelations for the Main Study Variables

	M	*SD*	1	2	3	4	5
1. Self-esteem (T1)	3.22	.52	—				
2. Self-esteem (T3)	3.25	.51	.48**	—			
3. Expected social acceptance (T1)	3.43	.58	.22**	.11	—		
4. Perceived social acceptance (T2)	3.16	.48	.17**	.21**	.36**	—	
5. Neuroticism (T123)	2.74	.63	−.45**	−.41**	−.23**	−.20**	—
6. Discrepancy between expected (T1) and perceived (T2) social acceptance	.00	1.13	−.05	.08	−.57**	.57**	.03

* $p < .05$, ** $p < .01$.

Primary Analyses

To index the discrepancy between children's expected and perceived social acceptance, we computed a difference score between standardized perceived social acceptance at Time 2 and standardized expected social acceptance at Time 1 (standardized difference scores have been recommended over other discrepancy indices by De Los Reyes & Kazdin, 2004; for a discussion of alternative discrepancy indices, see Griffin, Murray, & Gonzalez, 1999). Positive values represent above-expectation acceptance whereas negative values represent below-expectation acceptance. Next, to test whether this discrepancy predicted changes in self-esteem, we conducted a hierarchical regression analysis with self-esteem at Time 3 as dependent variable. We entered self-esteem at Time 1 in Step 1, the discrepancy between expected and perceived social acceptance in Step 2, neuroticism in Step 3, and the interaction between neuroticism and the discrepancy in Step 4. All predictors were centered to reduce multicollinearity (Aiken & West, 1991).

As predicted, the discrepancy between expected and perceived social acceptance significantly predicted change in self-esteem from Time 1 to Time 3 (see Table 2). Moreover, in Step 4, this main effect was qualified by the predicted significant interaction between the discrepancy and neuroticism. *Post hoc* probing (Aiken & West, 1991) showed that for children low on neuroticism (i.e., 1 *SD* below the mean), the discrepancy between expected and perceived social acceptance did not predict self-esteem change ($\beta = -05$, $p > .32$, see Figure 1). For children high on neuroticism (i.e., 1 *SD* above the mean), however, the discrepancy between expected and perceived social acceptance did predict self-esteem change ($\beta = .23$, $p < .001$). Children high on neuroticism showed decreased self-esteem when their acceptance was lower than expected (predicted change score = −0.2, see Figure 1), but no change in self-esteem when their acceptance was higher than expected (change score = 0.0).

To obtain more detailed insight into the moderating impact of neuroticism, we conducted additional *post hoc* analyses using the 'region of significance' method

Table 2. Summary of Hierarchical Regression Analyses Predicting Self-esteem at Time 3

	B	*SE*	β	R^2	ΔR^2
Step 1				.23	.23**
Constant	3.26	.03			
Self-esteem T1	.47	.05	.48**		
Step 2				.24	.01*
Discrepancy between expected (T1) and perceived (T2) social acceptance	.05	.02	.11*		
Step 3				.29	.05**
Neuroticism T123	−.18	.04	−.22**		
Step 4				.31	.02**
Discrepancy × neuroticism	.10	.03	.15**		

* $p < .05$, ** $p < .01$.

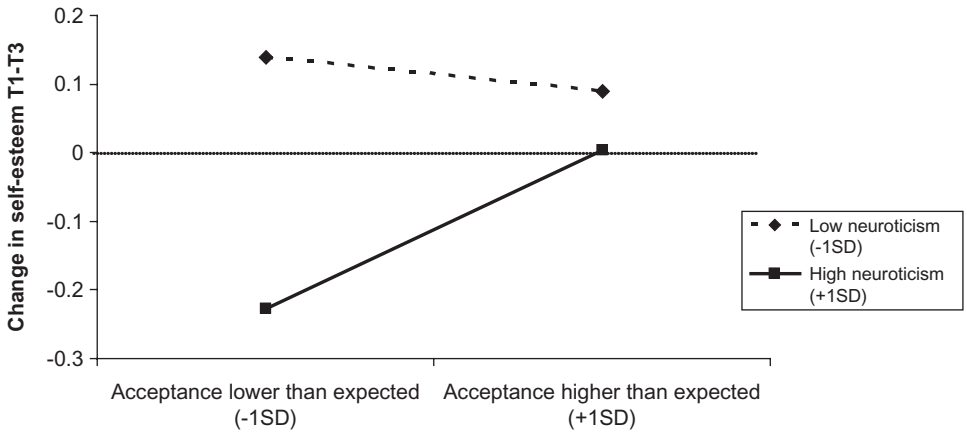

Figure 1. Neuroticism Moderates the Relationship between Non-expected Acceptance and Cross-transition Self-esteem Change.
Notes: High values of neuroticism and non-expected acceptance are 1 *SD* above the mean; low values of neuroticism and non-expected acceptance are 1 *SD* below the mean. Positive values of change represent increased self-esteem; negative values of change represent decreased self-esteem.

(recommended by Preacher, Curran, & Bauer, 2006). This method computes at what point along the distribution of a moderating variable (in this case, neuroticism) the slope becomes significantly different from zero. Results showed that the slope became significant (alpha = 0.05) at a neuroticism level of −0.22 or higher—about one-third *SD*

below the mean value of the centered neuroticism distribution. Thus, for children whose neuroticism levels varied from below average to very high, disappointing acceptance predicted decreased self-esteem. No such effect was found for children scoring lower than one-third *SD* below the mean on neuroticism.[1]

Next, we tested a regression model including gender. There was no main effect of gender on changes in self-esteem across the school transition, $\beta = .01$, $p > .88$, but we did find an interaction effect between gender and the discrepancy score, with girls being more reactive to discrepancies in expected and perceived acceptance than boys, $\beta = .17$, $p < .05$. However, this gender × discrepancy interaction became non-significant when the neuroticism × discrepancy interaction was added to the model. This suggests that the moderating effects for gender were actually due to differences in levels of neuroticism between boys and girls.

To establish discriminant validity for neuroticism as a moderator, we also tested a regression model including the other Big Five personality traits (i.e., agreeableness, extraversion, conscientiousness, and openness to experiences) and their interaction terms. Neuroticism turned out to be the only significant moderator ($\beta = .16$, $p < .01$; other βs $< .09$, ps $> .10$). Thus, of the five core dimensions that define children's personality, it is specifically neuroticism that is associated with sociometer sensitivity (Denissen & Penke, 2008a).

Discussion

Why does some children's self-esteem decrease across the transition to secondary school whereas other children's self-esteem does not? We found that children's level of self-esteem changed as a function of how much their posttransition experiences of social acceptance differed from the social acceptance they expected beforehand. During the secondary school transition, self-esteem does not change for all children alike. Rather, children's self-esteem changes as a function of how much their current social acceptance meets their prior expectations. These findings support a recent extension of sociometer theory, which posits that people not only monitor acceptance and rejection in the here and now, but also monitor whether social feedback is consistent with their trait self-esteem (Stinson et al., 2010). Our results show that trait self-esteem indeed changes as a function of discrepancies between people's expectations of social acceptance and the actual social feedback they receive.

Importantly, not all children's sociometers were equally sensitive. The more neurotic children were, the more reactive their self-esteem was to discrepancies between expected and perceived social acceptance. Specifically, significant levels of self-esteem reactivity were found among those children whose neuroticism levels ranged from slightly below average to high. Only for children low in neuroticism (i.e., children whose neuroticism levels were more than one-third *SD* below the mean), self-esteem appeared resistant to cross-transition discrepancies between expected and perceived social acceptance. No other Big Five personality traits predicted sociometer sensitivity, highlighting the specificity of neuroticism to children's sociometer sensitivity. Girls' sociometer sensitivity also appeared stronger than that of boys, but this difference was driven by girls' higher levels of neuroticism.

Interestingly, neuroticism was more potent at magnifying self-esteem decreases (i.e., when children's perceived social acceptance was disappointing) than self-esteem increases (i.e., when children's perceived social acceptance was better than expected). This finding is consistent with typical conceptualizations of neuroticism as reflecting

negative psychological reactivity (Bolger & Zuckerman, 1995; Carver, Sutton, & Scheier, 2000; Denissen & Penke, 2008a). Similar results were found in a study among adults (Denissen & Penke, 2008b). When people high on neuroticism perceived low social inclusion, they experienced especially low levels of self-esteem compared with people low on neuroticism. By contrast, when they perceived high social inclusion, they did not experience higher levels of self-esteem compared with people low on neuroticism. Thus, rather than reflecting a balanced sensitivity to both negative and positive social events, neuroticism seems to reflect a vulnerability to negative social events in particular, possibly undermining children's well-being. These results are in line with the diathesis-stress model, which posits that predisposing vulnerability factors often combine with environmental stress to predict negative outcomes (Zuckerman, 1999).

Our findings are also consistent with Leary and Baumeister's (2000) notion that the sociometer system might be more sensitive to negative cues of social acceptance than to positive cues of social acceptance. Leary and Baumeister draw an analogy with other motivational systems, such as the hunger system. The hunger system urges individuals to eat when nutrients become deficient, but does not so much urge individuals to stay maximally saturated at all times. Similarly, they argue that the sociometer system may be reactive to decrements in acceptance but does not necessarily urge individuals to seek maximal acceptance at all times.

An important direction for future research is to examine the adaptiveness of sociometer sensitivity. According to sociometer theory, the sociometer system serves an adaptive regulatory function and may help people adjust to changes in their social environment (Maner, DeWall, Baumeister, & Schaller, 2007). On the other hand, one might assume that there can be costs to sociometer sensitivity, such that elevated levels of sociometer sensitivity may reach a point that they are 'too much of a good thing'. Future research should seek to establish the costs and benefits of sociometer sensitivity.

The present study contributes in several ways to the existing literature. It provides a longitudinal test of sociometer theory in the critical developmental stage of early adolescence, a time when children are particularly sensitive to their peers' evaluation of them, and also a time when children's self-esteem is still relatively unstable (Harter, 2006; Trzesniewski et al., 2003). In doing so, we focused on the transition to secondary school, a naturally occurring time of change that poses a challenge to children's feelings of acceptance and self-esteem. Also, whereas prior research on school transitions focused mainly on mean level changes in self-esteem (Rudolph, Lambert, Clark, & Kurlakowsky, 2001), we adopted an individual differences approach, and found that a changed social context after the transition to secondary school can have differential consequences for children's self-esteem.

A number of limitations should be noted. First, expected social acceptance was indexed by different aspects of children's expected future social functioning in secondary school (i.e., number of friends, liking by classmates, and popularity). Although these items formed a reliable scale, using a scale confined to expected future liking would have been more closely aligned to the measure of perceived social acceptance (i.e., ratings of liking by each classmate).

Second, we measured children's perceived acceptance by peers rather than their actual acceptance because sociometer theory posits that children's self-esteem will change in response to their own perceptions of being accepted by others, regardless of actual acceptance by others. However, one could argue that self-esteem can only function as a helpful sociometer of children's interpersonal acceptance to the extent

that children's social perceptions are rooted in reality. In future research, it would be interesting to study the effects of discrepancies in actual peer acceptance across the secondary school transition on changes in children's self-esteem as well.

Third, we chose to focus rather narrowly on how much children were accepted by their classmates; we did not examine other potential sources of acceptance (e.g., acceptance from parents, teachers, or close friends). Previous research has shown that peers' acceptance is a stronger determinant of young adolescents' self-esteem than is teachers' or close friends' acceptance (Harter, 1999). Moreover, peers' acceptance is more likely than parents' acceptance to be associated with self-esteem changes across the secondary school transition because it is mainly the peer context that changes. Still, further research should examine the extent to which these other sources of acceptance affect transitioning children's self-esteem as well.

Fourth, perceived social acceptance was measured relatively early in the school year (i.e., three weeks after the transition to secondary school). Social status in new peer groups tends to stabilize relatively quickly, typically in a matter of weeks (Coie & Kupersmidt, 1983). Still, we acknowledge the possibility that children's own perceptions of their social acceptance need some time longer to crystallize, a process that we may have not fully tapped.

Fifth, the focus of the present study was on changes in self-esteem as a function of changes in relational value. Of course, this is not to say that other changes concurring with the secondary school transitions are irrelevant. For example, prior research has suggested that advanced pubertal maturation relative to peers is related to decreased self-esteem, especially so at the start of secondary school (Reynolds & Juvonen, 2011). Also, differences in academic practices between primary and secondary school (e.g., stricter grading, ability grouping) have been linked to changes in self-esteem (Eccles et al., 1993). We recommend further research on the joint effects of these changes on self-esteem change across the secondary school transition.

In conclusion, this study found that children's self-esteem can change across the transition from primary school to secondary school as a function of how their perceived social acceptance matches their prior expectations. Our findings are consistent with the view that self-esteem functions as a sociometer, a gauge of social acceptance. Children high on neuroticism are especially prone to experience self-esteem decreases when their 'hopes are dashed'—when they experience disappointing levels of social acceptance. These children might need a helping hand when crossing the doorstep of their new secondary school.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Baldwin, M. W., & Keelan, J. P. R. (1999). Interpersonal expectations as a function of self-esteem and sex. *Journal of Social and Personal Relationships*, *16*, 822–833. doi: 10.1177/0265407599166008

Barber, B. K., & Olsen, J. A. (2004). Assessing the transitions to middle and high school. *Journal of Adolescent Research*, *19*, 3–30. doi: 10.1177/0743558403258113

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497–529. doi: 10.1037/0033-2909.117.3.497

Berndt, T. J., Hawkins, J. A., & Jiao, Z. (1999). Influences of friends and friendships on adjustment to junior high school. *Merrill-Palmer Quarterly*, *45*, 13–41.

Blackhart, G. C., Nelson, B. C., Knowles, M. L., & Baumeister, R. F. (2009). Rejection elicits emotional reactions but neither causes immediate distress nor lowers self-esteem: A

meta-analytic review of 192 studies on social exclusion. *Personality and Social Psychology Review*, *13*, 269–309. doi: 10.1177/1088868309346065

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, *69*, 890–902. doi: 10.1037//0022-3514.69.5.890

Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin*, *26*, 741–751. doi: 10.1177/0146167200268008

Cillessen, A. H. N., & Mayeux, L. (2007). Expectations and perceptions at school transitions: The role of peer status and aggression. *Journal of School Psychology*, *45*, 567–586. doi: 10.1016/j.jsp.2007.05.004

Coie, J. D., & Kupersmidt, J. B. (1983). A behavioral analysis of emerging social status in boys' groups. *Child Development*, *54*, 1400–1416. doi: 10.2307/1129803

Costa, P. T. J., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality & Social Psychology*, *81*, 322–331. doi: 10.1037//0022-3514.81.2.322

Crockett, L. J., Petersen, A. C., Graber, J. A., Schulenberg, J. E., & Ebata, A. (1989). School transitions and adjustment during early adolescence. *The Journal of Early Adolescence*, *9*, 181–210. doi: 10.1177/0272431689093002

David, C. F., & Kistner, J. A. (2000). Do positive self-perceptions have a 'dark side'? Examination of the link between perceptual bias and aggression. *Journal of Abnormal Child Psychology*, *28*, 327–337. doi: 10.1023/A:1005164925300

De Los Reyes, A., & Kazdin, A. E. (2004). Measuring informant discrepancies in clinical child research. *Psychological Assessment*, *16*, 330–334. doi: 10.1037/1040–3590.16.3.330

Denissen, J. J. A., Geenen, R., van Aken, M. A. G., Gosling, S. D., & Potter, J. (2008). Development and validation of a Dutch translation of the Big Five Inventory (BFI). *Journal of Personality Assessment*, *90*, 152–157. doi: 10.1080/00223890701845229

Denissen, J. J. A., & Penke, L. (2008a). Motivational individual reaction norms underlying the five-factor model of personality: First steps towards a theory-based conceptual framework. *Journal of Research in Personality*, *42*, 1285–1302. doi: 10.1016/j.jrp.2008.04.002

Denissen, J. J. A., & Penke, L. (2008b). Neuroticism predicts reactions to cues of social inclusion. *European Journal of Personality*, *22*, 497–517. doi: 10.1002/per.682

Denissen, J. J. A., Penke, L., Schmitt, D. P., & van Aken, M. A. G. (2008). Self-esteem reactions to social interactions: Evidence for sociometer mechanisms across days, people, and nations. *Journal of Personality and Social Psychology*, *95*, 181–196. doi: 10.1037/0022–3514.95.1.181

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., et al. (1993). Development during adolescence: The impact of stage environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, *48*, 90–101. doi: 10.1037/0003-066X.48.2.90

Fenzel, L. M. (2000). Prospective study of changes in global self-worth and strain during the transition to middle school. *The Journal of Early Adolescence*, *20*, 93–116. doi: 10.1177/0272431600020001005

Gerber, J., & Wheeler, L. (2009). On being rejected: A meta-analysis of experimental research on rejection. *Perspectives on Psychological Science*, *4*, 468–488. doi: 10.1111/j.1745–6924.2009.01158.x

Griffin, D., Murray, S., & Gonzalez, R. (1999). Difference score correlations in relationship research: A conceptual primer. *Personal Relationships*, *6*, 505–518. doi: 10.1111/j.1475–6811.1999.tb00206.x

Grolnick, W. S., Kurowski, C. O., Dunlap, K. G., & Hevey, C. (2000). Parental resources and the transition to junior high. *Journal of Research on Adolescence*, *10*, 465–488. doi: 10.1207/SJRA1004_05

Hardy, C. L., Bukowski, W. M., & Sippola, L. K. (2002). Stability and change in peer relationships during the transition to middle-level school. *The Journal of Early Adolescence*, *22*, 117–142. doi: 10.1177/0272431602022002001

Harter, S. (1988). *Manual for the self-perception profile for adolescents*. Denver, CO: University of Denver.

Harter, S. (1999). *The construction of the self: A developmental perspective*. New York: The Guilford Press.

Harter, S. (2006). The self. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (Vol. 3, pp. 505–570). New York: Wiley.

Harter, S., & Whitesell, N. R. (2003). Beyond the debate: Why some adolescents report stable self-worth over time and situation, whereas others report changes in self-worth. *Journal of Personality*, *71*, 1027–1058. doi: 10.1111/1467–6494.7106006

Hirsch, B. J., & DuBois, D. L. (1991). Self-esteem in early adolescence: The identification and prediction of contrasting longitudinal trajectories. *Journal of Youth and Adolescence*, *20*, 53–72. doi: doi: 10.1007/BF01537351

Hirsch, B. J., & Rapkin, B. D. (1987). The transition to junior high school: A longitudinal study of self-esteem, psychological symptomatology, school life, and social support. *Child Development*, *58*, 1235–1243. doi: 10.1111/1467–8624.ep8591137

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York: Guilford.

Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, *32*, 1–62. doi: 10.1016/S0065-2601(00)80003-9

Leary, M. R., & Downs, D. L. (1995). Interpersonal functions of the self-esteem motive: The self-esteem system as a sociometer. In M. H. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp. 123–144). New York: Plenum Press.

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, *68*, 518–530. doi: 10.1037/0022-3514.68.3.518

Lemay, E. P., Jr., & Ashmore, R. D. (2006). The relationship of social approval contingency to trait self-esteem: Cause, consequence, or moderator? *Journal of Research in Personality*, *40*, 121–139. doi: 10.1016/j.jrp.2004.09.012

London, B., Downey, G., Bonica, C., & Paltin, I. (2007). Social causes and consequences of rejection sensitivity. *Journal of Research on Adolescence*, *17*, 481–506. doi: 10.1111/j.1532–7795.2007.00531.x

Lord, S. E., Eccles, J. S., & McCarthy, K. A. (1994). Surviving the junior high school transition family processes and self-perceptions as protective and risk factors. *The Journal of Early Adolescence*, *14*, 162–199. doi: 10.1177/027243169401400205

Mak, A. S., Blewitt, K., & Heaven, P. C. L. (2004). Gender and personality influences in adolescent threat and challenge appraisals and depressive symptoms. *Personality and Individual Differences*, *36*, 1483–1496. doi: 10.1016/S0191–8869(03)00243-5

Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the 'porcupine problem'. *Journal of Personality & Social Psychology*, *92*, 42–55.

Nottelmann, E. D. (1987). Competence and self-esteem during transition from childhood to adolescence. *Developmental Psychology*, *23*, 441–450. doi: 10.1037//0012-1649.23.3.441

Pellegrini, A. D., & Bartini, M. (2000). A longitudinal study of bullying, victimization, and peer affiliation during the transition from primary school to middle school. *American Educational Research Journal*, *37*, 699–725. doi: 10.3102/00028312037003699

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics*, *31*, 437–448. doi: 10.3102/10769986031004437

Reynolds, B. M., & Juvonen, J. (2011). Pubertal timing fluctuations across middle school: Implications for girls' psychological health. *Journal of Youth and Adolescence*, *41*, 677–690. doi: 10.1007/s10964-011-9687-x

Rose, A. J., & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. *Psychological Bulletin*, *132*, 98–131. doi: 10.1037/0033-2909.132.1.98

Rudolph, K. D., Lambert, S. F., Clark, A. G., & Kurlakowsky, K. D. (2001). Negotiating the transition to middle school: The role of self-regulatory processes. *Child Development*, *72*, 929–946. doi: 10.1111/1467–8624.00325

Seidman, E., Allen, L., Aber, J. L., Mitchell, C., & Feinman, J. (1994). The impact of school transitions in early adolescence on the self-system and perceived social context of poor urban youth. *Child Development*, *65*, 507–522. doi: 10.1111/1467–8624.ep9405315138

Shiner, R., & Caspi, A. (2003). Personality differences in childhood and adolescence: Measurement, development, and consequences. *Journal of Child Psychology and Psychiatry*, *44*, 2–32. doi: 10.1111/1469–7610.00101

Simmons, R. G., & Blyth, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. New York: Aldine de Gruyter.

Srivastava, S., & Beer, J. S. (2005). How self-evaluations relate to being liked by others: Integrating sociometer and attachment perspectives. *Journal of Personality and Social Psychology*, *89*, 966–977. doi: 10.1037/0022–3514.89.6.966

Stinson, D. A., Logel, C., Holmes, J. G., Wood, J. V., Forest, A. L., Gaucher, D., et al. (2010). The regulatory function of self-esteem: Testing the epistemic and acceptance signaling systems. *Journal of Personality & Social Psychology*, *99*, 993–1013. doi: 10.1111/1467-8624.00325

Thomaes, S., Bushman, B. J., Stegge, H., & Olthof, T. (2008) Trumping shame by blasts of noise: Narcissism, self-esteem, shame, and aggression in young adolescents. *Child Development*, *79*, 1792–1801. doi: 10.1111/j.1467–8624.2008.01226.x

Thomaes, S., Reijntjes, A., Orobio de Castro, B., Bushman, B. J., Poorthuis, A., & Telch, M. J. (2010). I like me if you like me: On the interpersonal modulation and regulation of preadolescents. *Child Development*, *81*, 811–825. doi: 10.1111/j.14678624. 2010.01435.x

Treffers, P. D. A., Goedhart, A. W., Van den Bergh, B. R. H., Veerman, J. W., Ackaert, L., & De Rycke, L. (2002). *Competentie Belevingsschaal voor Adolescenten (CBSA), handleiding*. Lisse: Swets Test Publishers.

Trzesniewski, K. H., Donnellan, M. B., & Robins, R. W. (2003). Stability of self-esteem across the life span. *Journal of Personality and Social Psychology*, *84*, 205–220. doi: 10.1037/0022–3514.84.1.205

Wigfield, A., Eccles, J. S., MacIver, D., Reuman, D. A., & Midgley, C. (1991). Transitions during early adolescence: Changes in children's domain-specific self-perceptions and general self-esteem across the transition to junior high school. *Developmental Psychology*, *27*, 552–565. doi: 10.1037//0012-1649.27.4.552

Zuckerman, M. (1999). *Vulnerability to psychopathology: A biosocial model*. Washington, DC: American Psychological Association.

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Note

1. To better understand the relative contribution of both components in the discrepancy score (i.e., expected social acceptance and perceived social acceptance), we conducted a similar hierarchical regression analysis, but this time we controlled for perceived social acceptance. Neither perceived social acceptance nor the discrepancy score was significant predictors in this model, $\beta = .05$, $p > .41$ and $\beta = .08$, $p > .19$, respectively. Although the significant main effect for the discrepancy score disappeared when controlling for perceived social acceptance, the interaction between the discrepancy score and neuroticism remained significant, $\beta = .16$, $p < .01$, whereas the interaction between perceived social acceptance and neuroticism was not significant, $\beta = -.02$, $p > .75$. These results emphasize the importance of taking into account both expected and perceived social acceptance to predict self-esteem change among children high on neuroticism.